

AN UNUSUAL BOTANICAL AREA IN MISSOURI

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Since the time of John Bradbury in 1809, and subsequently, through the efforts of Engelmann, Broadhead, Swallow, Trelease, Letterman, Eggert, Kellogg, and others of that period, Missouri has received its share of botanical exploration. The later and more detailed explorations of B. F. Bush and E. J. Palmer in the late nineteenth century and the first three decades of the twentieth century revealed the existence of additional significant plant regions in the state. Their work brought to light the coastal plain flora of the Mississippi Embayment of the southeastern Missouri lowlands, the elements of a Great Plains flora in the loess hills of northwestern Missouri, the edaphic and special flora of the Grand Falls chert barrens, the southwestern floral element of the limestone "bald knobs" and southern floral element of the White River region of southwestern Missouri, the northern element in the flora of northern Missouri, and such relict floras as that of Jam-up Bluff in Shannon County. Thus, after nearly a century and a quarter of botanical endeavor, the possibilities of discovering unknown and significantly interesting floristic areas in the state would have seemed negligible.

Nevertheless, during the past quarter century in a cycle of intensive exploration of areas, mostly remote and inaccessible to previous workers, the writer has revealed the presence within the state of such fascinating botanically rich areas as the sink-hole ponds and swampy meadows of the southeastern Ozarks, saline and brackish springs of central Missouri, and what represents a "driftless" area of northeastern and east-central Missouri. Each of these areas has uncovered many species new to the flora of the state, the results of which have, for the most part, appeared in various numbers of *Rhodora*.

Within the past four years, a new area, previously unbotanized, but occurring in a section of the state thought to have been adequately explored, has been visited by the writer. Since six species new to Missouri have turned up in this area, it has been thought appropriate to devote a special article to the locality concerned, rather than to scatter the information in a more general report.

The area concerned involves a series of sand hills and spring-fed streams emanating from Crowley Ridge in Stoddard County in extreme southeastern Missouri. These sands are of Tertiary age. Although they are also found in adjacent Scott, New Madrid, and Dunklin counties, the series developed in Stoddard County are larger and contain a more unusual flora than in the other sites. The particular area lies between three and one-half to three and three-quarter miles southeast of Bloomfield. The hills are generally forested with several species of oak (*Quercus velutina*, *Q. coccinea*, *Q. imbricaria*, *Q. falcata*), hickory (*Carya texana*, *C. ovalis*, *C. tomentosa*), *Sassafras albidum*, and *Cornus florida*, with an herbaceous forest floor cover of *Panicum laxiflorum*, *Comandra Richardsiana*, *Arabis missouriensis*, *Ascyrum hypericoides* var. *oblongifolium*, *Phlox pilosa*, *Lithospermum caroliniense*, and *Linaria canadensis*. In the more open sandy areas such herbaceous plants as *Polygonella americana*, *Euphorbia corollata*, and *Asclepias verticillata* are common. In the small valleys along spring-fed streamlets between the sand hills occur stands of *Ilex opaca* of sizeable extent. Occurring with the holly are such shrubs as *Alnus serrulata*, *Lindera Benzoin*, and *Itea virginica*. Along the wet banks and swampy ground are found *Osmunda cinnamomea*, *O. regalis* var. *spectabilis*, *Onoclea sensibilis*, *Dryopteris Thelypteris* var. *pubescens*, rarely *Woodwardia areolata*, *Panicum microcarpon*, *P. polyanthes*, *P. commutatum*, *Cyperus flavescens* var. *poaeformis*, *Scirpus rubricosus*, *Fimbristylis autumnalis*, *Carex virescens* and *C. lurida*, *Juncus diffusissimus*, *Habenaria clavellata* and the rare *H. ciliaris*, *Boehmeria cylindrica*, *Hypericum tubulosum* var. *Walteri*, *Jussiaea decurrens*, *Rhexia virginica*, *Chelone glabra*, *Solidago patula*, *S. rugosa* var. *cellidifolia*, the rare *Eupatorium fistulosum*, *Pluchea petiolata*, and the rare *Polygonum arifolium*. On adjacent dry sandy slopes the very rarely collected *Aristida lanosa* is found.

Beginning the exploration of the area in August, 1954, the author found *Bartonia paniculata* at the head of a tiny spring branch and *Pyrus melanocarpa* along the bordering sandy banks in alder thickets and adjacent lower sandy slopes nearby. Both species were reported subsequently as new to the state (Rhodora 57: 314, 315. 1955). The same year *Paspalum setaceum* was added from the same area, and in April, 1955, along the same

spring branch was found *Trisetum pensylvanicum*, also new. In June, 1955, *Typha latifolia* f. *ambigua*, was found as an addition along the same spring branch. Before having had an opportunity to report these latter discoveries, a visit to the area in October, 1955, yielded *Scleria nitida* and *Trichostema setaceum*.

The following is a summary of the data for the species from this unique area not previously reported for the state:

***Typha latifolia* L., forma *ambigua* (Sonder) Kronf.** Swampy spring branch at base of Crowley Ridge near junction with floodplain, on property of Mr. Martin, T 25 N, R 11 E, sect. 6, near Pleasant Valley Church and Triplett Cemetery, 5 mi. northeast of Dexter, Stoddard Co., June 24, 1955, *Steyermark* 78660. This form was growing with typical *T. latifolia* (*Steyermark* 78661).

***Trisetum pensylvanicum* (L.) Beauv.** Along spring-fed creek near junction of Crowley Ridge and lowland, bordered by sandy wooded ravine slopes, T 25 N, R 11 E, NW $\frac{1}{4}$ sect. 6, on property of Mr. Martin, 3 $\frac{1}{2}$ mi. southeast of Bloomfield, Stoddard Co., April 25, 1955, *Steyermark* 78285. The author first collected this species in April, 1955. Upon returning to the same locality two months later in June to show Drs. C. L. Kucera and Robert McDermott of the Botany Department of the University of Missouri the area concerned, no trace of this vernal-flowering species was evident. The plants had been growing half-submerged in the water of the spring branch among the thickets of *Alnus serrulata*. In the shallow water of the same stream and occurring with *Trisetum pensylvanicum* were numerous individuals of an unusual aquatic fungus with fleshy whitish stipe and dull orange sporangia. It was identified by Dr. Francis Drouet as *Mitrula phalloides*. The range of the *Trisetum*, according to Gray's Manual, is "Mass. to O., s. to Fla., Ala., and La." Apparently, this record represents the northwesterly limit of the species.

***Paspalum setaceum* Michx.** (typical). Dry sandy wooded slopes bordering ravines along and tributary to spring-fed creek near junction of Crowley Ridge and lowland, on property of Mr. Martin, T 25 N, R 11 E, NW $\frac{1}{4}$ sect. 6, 3 $\frac{1}{2}$ mi. southeast of Bloomfield, Stoddard Co., August 20, 1954, *Steyermark* 76726.

Previously known from "Fla. to Tex. n. to SE Mass., L. I., O. and Ky. and Mex.", according to Gray's Manual, this is another one of the coastal plain species which extends into this section of southeastern Missouri.

Scleria nitida Willd. Sandy and mossy slopes above and along spring branch in valley at junction of Crowley Ridge and bottomland, on property of Mr. Martin, T 25 N, R 11 E, sect. 6, 3 $\frac{3}{4}$ mi. southeast of Bloomfield, Stoddard Co., October 17, 1955, *Steyermark 80375*. Although this species is not recognized by Core in his revision of *Scleria* nor by Gleason in the New Illustrated Flora as distinct, and included by them under *S. triglomerata*, *S. nitida* appears amply distinct in having larger achenes and a close dense puberulence on the inner sheath of the leaf blades. The habitat of *S. nitida* in Missouri is also quite different from that of *S. triglomerata*. The latter occurs in the state on rocky limestone glades and prairies on soils of neutral to alkaline reaction, whereas *S. nitida* is found in the Stoddard County locality on sandy acid soil. It represents a remarkable extension of range of a predominantly southeastern species.

Trichostema setaceum Houtt. Sandy openings on slopes of blowout of sandy prairie and slopes on east side of road and eroded gully, Crowley Ridge, T 25 N, R 11 E, sect. 31, 3 $\frac{1}{2}$ mi. southeast of Bloomfield, Stoddard Co., October 17, 1955, *Steyermark 80349*. Occurring in the same immediate area of the open sand slope as *Paspalum setaceum*, the discovery of this species adds another of the increasing numbers of coastal plain species to the flora of Missouri. Its previous known range was "Fla. to La., n. to sw. Ct., centr. Pa. and s. O.", according to Gray's manual. The new station represents its most northwesterly known occurrence. It was associated in the open sand area with *Aristida lanosa*, *Digitaria filiformis* var. *villosa*, and *Froelichia floridana* var. *campestris*.—MISSOURI BOTANICAL GARDEN.

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